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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,470	11/28/2001	David Canard	FR 000127	2289

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EXAMINER

NGUYEN, HAI L

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,470

Applicant(s)

CANARD ET AL.

Examiner

Hai L. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Argument

1. Applicant's arguments with respect to the prior art rejections by the previous office action mailed on 03/01/04 have been fully considered but are not deemed to be persuasive. Therefore, the prior art rejection is maintained. The arguments supporting the previous rejections are addressed in detail below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (US 5,825,640; previously cited) in view of Ziegler et al. (US 5,877,641; previously cited).

With regard to claims 1, 2, and 7, Quigley et al. discloses in Figs. 1-3 a device, and a method of use thereof, for comparison, including a phase/frequency comparator (24), which is designed to receive a first input signal (VREF) and second input signal (VLO); at least two current sources (32, 34), each of which is designed to emit a charge current; and a capacitive element (29), which is designed to have the charge current pass through it, and to generate the control signal (VCONTROL); where the phase/frequency comparator is designed such that the first regulation signal comprises a succession of pulses, each of which has a width which is

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modulated according to the frequency difference which exists between the first and second input signals. Figs.2-3 of Quigley et al. shows a device meeting all of the claimed limitations of the claims except for the phase/frequency comparator emit two regulation signals (UP, DOWN) instead of one regulation signal as recited in the claims. Ziegler et al. teaches in Fig.8 a comparator including a flip-flop RS (38) connected to regulation signals (UP, DOWN) for emitting a single regulation signal (Q) to control the charge currents of the two current sources. Therefore, it would have been obvious to one of ordinary skill in the art to implement either the comparator (Fig.8) or a RS flip-flop (38) taught by Ziegler et al. with the prior art (Figs.2-3 of Quigley et al.) in order to prevent the non-determine state when the two input signals (VREF, VLO) are negative-going in coincidence.

With regard to claim 3, the phase/frequency comparator includes a first (52) and a second detector (54) for active edges of the first and second input signals respectively, the outputs of which are connected to the inputs for setting to one and to zero of flip-flop RS; and means (RESET, 40, 42, 56s, 58s, 60, 62, 66, 68) for re-initialization of the first and second detectors, which are designed to deactivate one or the other of the detectors, when the active edge which it has detected has been taken into account by the flip-flop RS.

Claims 4 and 6 are rejected for similar motivation. Note the above discussion with regard to claims 1, 2, and 7.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. in view of Ziegler et al. as applied to claim 4 above, and further in view of Ninomiya (US 6,512,801; previously cited).

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The above-discussed circuit of the prior arts meets all of the claimed limitations except for a programmable divider (DIV in instant Fig.1 of present application). Ninomiya teaches in Fig.1 a circuit comprising a programmable divider (21), which is inserted between the oscillator (11) and the device (23, 25) for comparison as recited in claim 5. Therefore, it would have been obvious to one of ordinary skill in the art to implement the programmable divider taught by Ninomiya with the prior art (Fig.2 of Quigley et al.) in order to set a dividing ratio with which the oscillator (22) can generate the output signal (VLO) with any frequency, within the range of the circuit, to meet the specific frequency of the particular application.

Response to Arguments

5. Applicant's argument is that "Quigley requires two separate regulation signals in order to control the two separate current sources of its charge pump. Ziegler requires only a single regulation signal". That argument is not persuasive because the two separate current sources of Quigley can be controlled by a single regulation signal, which is emitted by the RS flip-flop (38). For example, Fig. 1 of Harrison (US 6,470,060) clearly shows a circuit comprising a phase detector that includes a flip-flop 26, wherein the single regulation output signal of the flip-flop 26 is used to control the two separate current sources of element 36 (aka charge pump). In other words, the logic level of the flip-flop's output is either high or low, one of the current sources will be conductive and the other will be non-conductive when the logic level of the flip-flop's output is high, and vice versa when the logic level is low.

Therefore, the rejections to the claims are proper.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 571-272-1747 and Right Fax number is 571-273-1747. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone numbers for the organization where this application or proceeding is 703-872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

HLN

April 15, 2004



TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800